

Proposed Project

Upper Little Patuxent

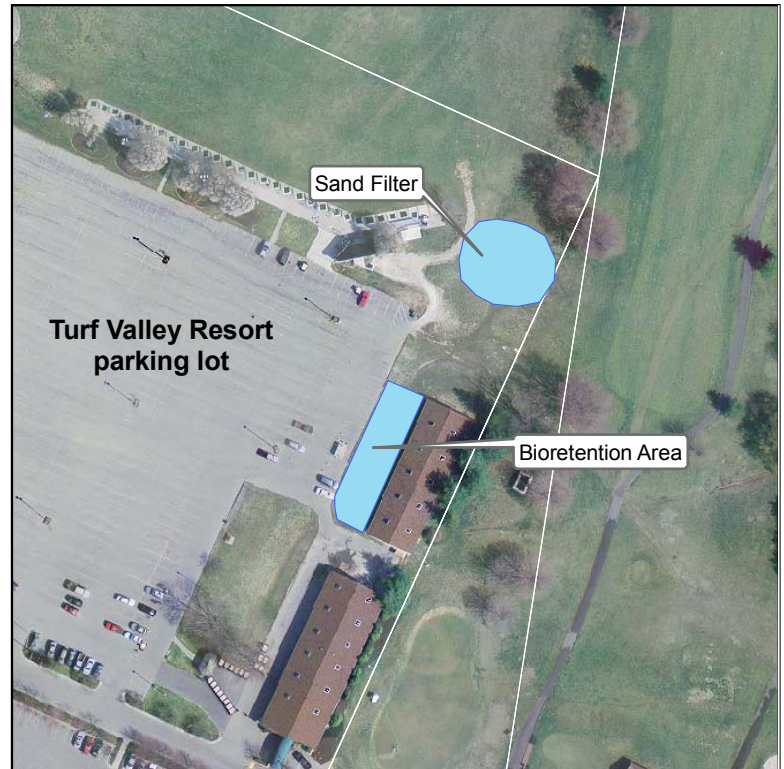
Project Number: LPX3_09

Subwatershed: Little Patuxent 3

Project Type: Bioretention / Infiltration

Project Size: 9 acre drainage area/ 4.6 acres impervious

Project Location: At Turf Valley Resort parking lot next to the driving range.



Project Description: Turf Valley Resort has recently completed construction near their golf driving range. Some of the improvements include adding a new building at the driving range, installing a storm drain system to convey runoff and a new grassed depression area where the stormdrain system outfalls.

This project would involve adding various stormwater management practices to improve the water quality of runoff from the parking lot. In front of the buildings along the southeast side of the parking lot, a bioretention area would be installed with an underdrain that connects into the stormdrain system. Parking lot runoff would enter the bioretention facility, filter through the media, enter the stormdrain system and outfall into the depression. This would treat the water quality volume of a portion of the parking lot.

The remainder of the parking lot drains through stormdrains and into the grassed depression, which would be modified into a sand filter. The depression will need to be graded to maximize the surface area for infiltration. To treat the remainder of the water quality volume, the depression would need to be excavated and reshaped to accommodate the necessary volume.

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Project Benefits:

Peak Flow	This project would not affect peak flows.
Water Quality	This project would filter water, thus improving water quality.

Project Constraints:

Environmental	No environmental constraints are anticipated with this project.
Property Ownership	This is private property.
Facility Access	Access to this site is obtained from the parking lot and access roads at the Turf Valley Resort and Golf Course.
Design / Construction	To treat 100% of the required water quality volume at this site, it would be necessary to remove and/or modify many of the recent improvements made by to the property.

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Cost Detail:

ITEM	QTY	UNITS	UNIT COST	TOTAL
Green Technology				
Dry Swale w/ underdrain		SY	\$70.00	\$0
Dry Swale w/o underdrain		SY	\$25.00	\$0
Subsurface Infiltration (Trench)		SY	\$85.00	\$0
Filter Strip		AC	\$4,000.00	\$0
Bioswale w/ underdrain		SY	\$85.00	\$0
Bioswale w/o underdrain		SY	\$35.00	\$0
Bioretention	523	SY	\$120.00	\$62,760
Filtration				
Pre-treatment Sedimentation (0.3 WQv)		CY	\$50.00	\$0
Surface Sand Filter	595	SY	\$150.00	\$89,250
Underground Sand Filter		SY		\$0
Perimeter Sand Filter (Vault)		SY		\$0
Organic Filter		SY	\$140.00	\$0
Pocket Sand Filter		SY	\$150.00	\$0
Direct Construction Subtotal				\$152,010
Indirect Costs				
E/SC, MOT, MOS (10% of Directs, minimum \$2,000 maximum \$15,000)	1	LS	\$15,000.00	\$15,000
Construction Stakeout (\$1,000/Day)	4	Days	\$4,000.00	\$4,000
Base Construction Cost				\$171,010
Mobilization (10% of Directs or \$1,000)				\$15,201
Subtotal				\$186,211
Contingency (30%)				\$55,863
Construction Subtotal				\$242,074
Env't'l Studies / Permitting (5% of Construction or \$5,000, where necessary)				\$0
Engineering and Surveys (25% of Construction or \$30,000, maximum \$40,000)				\$40,000
Total Capital Cost				\$282,074
Operations and Maintenance Costs				
Annual Maintenance	6	Percent	\$9,121	
Discount Rate	5	Percent		
Expected Life	20	Years		
Net Present Value of O&M Costs				\$113,663
Life Cycle Cost				\$395,800